

PATENT SPECIFICATION



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PROVISIONAL SPECIFICATION.

Improvements in or Connected with Biscuit Making or Dough Working Machinery.

I, JOHN GALLIMORE, a British subject, of 10, Dunkeld Avenue, Rutherglen, Lanarkshire, do hereby declare the nature of this invention to be as follows:—

This invention refers to apparatus for feeding or delivering separate bodies in succession automatically, such bodies generally being of substantially similar form and size, the apparatus in one form being particularly adapted for dealing with bodies of dough for biscuit manufacture. For example, the bodies to be dealt with may be of spherical form. each body consisting of the material necessary to make a single biscuit.

Apparatus according to this invention comprises a device, in cross section of cylindrical character, mounted capable of rotation about its axis, and arranged with its axis, generally, horizontal. In the device pockets are formed arranged in circumferential alignment at, say, equal angles apart, which pockets extend inwards from the cylindrical surface and are separated circumferentially by peripheral surface portions of the device. More than one circumferential series of such pockets may be provided, arranged symmetrically in that corresponding pockets of the series are in longitudinal alignment. For dealing with, say, approximately spherical bodies of dough, the pockets may be of semi-spherical form, greater or less to a small extent. Associated with a device of this character means are provided for directing the bodies towards the device in a direction angularly downwards to the upper side of the device. For example, a chute may be provided arranged with its surface directed, angularly downwards to the periphery of the device, at, say, 60° more or less, so that bodies of dough placed on the chute will tend to slide down by gravity, and in one position, in

the process of rotation of the device, the column of bodies will be sustained by a circumferential surface portion of the device projecting above the surface of the chute, and in the process of rotation a pocket will be brought into position to receive the lowest body and that body will be carried by the device, passing over, and be discharged when the pocket has reached a position which no longer affords support to the body. Thus, in rotation pockets and peripheral surface portions of the device are presented alternately to the lower end of the column composed of bodies of dough.

Apparatus according to this invention is particularly adapted for use in conjunction with biscuit making or dough working machinery in which bodies of dough are required to be delivered to, say, a travelling band advanced intermittently, on to which separate bodies are required to be deposited in succession. For this purpose the drive applied to the device may be intermittent or continuous and synchronise with, say, the main drive or the step-by-step drive of the travelling conveyor.

In a machine for making biscuits having, say, two longitudinally arranged series of presses, one for flattening, the other for stabbing, the chute may comprise two separate channels and the device would comprise two circumferential series of pockets, in one instance four pockets may constitute a series and the relative circumferential length of pocket may be, say, about twice the length of the peripheral portions which intervene between successive pockets.

Dated this 16th day of October, 1922.

J. ALFRED BREWER,
Chartered Patent Agent,
58, St. Vincent Street, Glasgow.
Agent for the Applicant.

COMPLETE SPECIFICATION.

Improvements in or Connected with Biscuit Making or Dough Working Machinery.

I, JOHN GALLIMORE, a British subject, of 10, Dunkeld Avenue, Rutherglen, Lanarkshire, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention which refers to biscuit making or dough working machinery, hereinafter and in the claims referred to generally as biscuit making machinery, comprises apparatus for feeding or delivering separate bodies of dough in succession automatically, for biscuit manufacture, such bodies generally being of substantially similar form and size. For example, the bodies of dough to be dealt with may be of spherical form, or approximately so, each body consisting of the material necessary to make a single biscuit.

Machinery according to this invention comprises a feeding device, in cross section of cylindrical character, mounted capable of rotation about its axis, and arranged with its axis, generally, horizontal. In the feeding device pockets are formed arranged in circumferential alignment at, say, equal angles apart, which pockets extend inwards from the cylindrical surface and are separated circumferentially by peripheral surface portions of the device. More than one circumferential series of such pockets may be provided, arranged symmetrically in that corresponding pockets of the series are in longitudinal alignment. For dealing with, say, approximately spherical bodies of dough, the pockets may be of semi-spherical form, greater or less to a small extent. Associated with a feeding device of this character means are provided for directing the bodies towards the device in a direction angularly downwards to the upper side of the device. For example, a chute may be provided arranged with its surface directed angularly downwards to the periphery of the feeding device at, say 60° more or less, so that bodies of dough placed on the chute will tend to slide down by gravity, and in one position, in the process of rotation of the device, the column of bodies will be sustained by a circumferential surface portion of the device projecting above the surface of the chute, and in the process of rotation a pocket will be

brought into position to receive the lower body and that body will be carried by the feeding device, passing over, and be discharged when the pocket has reached a position which no longer affords support to the body. Thus, in rotation pockets and peripheral surface portions of the feeding device are presented alternately to the lower end of the column composed of bodies of dough.

In biscuit making machinery according to this invention in which bodies of dough are required to be delivered to, say, a travelling band advanced intermittently, on to which separate bodies are required to be deposited in succession, the drive applied to the feeding device may be intermittent or continuous and synchronise with, say, the main drive or the step-by-step drive of the travelling conveyor.

In biscuit making machinery having, say, two longitudinally arranged series of presses for flattening and stabbing the bodies of dough, the chute may comprise two separate channels and the device would comprise two circumferential series of pockets, in one instance four pockets may constitute a series.

An example of portion of a biscuit making machine according to this invention will now be described with reference to the accompanying drawing, in which:—

Figure 1 is a side elevation and Figure 2 is a plan, each partly in section.

In the drawing A designates a feeding device which, in cross section, see Figure 1, is of cylindrical character and is mounted capable of rotation about its axis which is horizontal. In the feeding device A pockets 2 are formed arranged in circumferential alignment at equal angles apart. The pockets 2 are separated circumferentially by peripheral surface portions 3 of the device. In the construction illustrated two circumferential series of pockets 2 are provided and these are so arranged that corresponding pockets of the two series are in longitudinal alignment. Extending angularly downwards to the upper side of the device A is a chute B. The successive positions occupied by bodies of dough C in the course of their being fed from the chute B to a travelling conveyor band D, advanced, say, intermittently,

are indicated by dotted lines, and the direction of rotation of the feeding device A as seen in Figure 1 is clockwise.

For rotating the feeding device A, transmission gear is provided comprising a shaft E, driven through and transmitting its motion through bevel gears.

The portion of the biscuit making machine illustrated also comprises pressers F carried by a rocking frame F', and pressers G and H and stabbers K carried by a reciprocating crosshead I.

The delivery apparatus described in Specification of Patent No. 12,014 of 1910, which refers to machines for banding or labelling cigars, and the feeder described in Specification of Patent No. 152,720, which refers to moulding machines for confectionery, are known.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. Biscuit making machinery comprising, a feeding device of cylindrical character, mounted to rotate about its axis, generally horizontal, the device having pockets arranged in circumferential alignment and separated circum-

ferentially by peripheral surface portions of the device, and means for directing bodies of dough towards the feeding device in a direction angularly downwards to the upper side of the device, the direction of rotation of the device being such as to so carry the bodies that they pass over the device.

2. Machinery according to Claim 1 characterised by the means for directing the bodies towards the device consisting of a chute.

3. Machinery according to either of the preceding claims characterised by the feeding device comprising more than one circumferential series of pockets with associated means for directing the bodies towards the device angularly downwards, say, chutes, one for each series of pockets.

4. Biscuit making machinery substantially as described.

5. Biscuit making machinery constructed substantially as described with reference to the accompanying drawing.

Dated this 29th day of June, 1923.

J. ALFRED BREWER,
Chartered Patent Agent,
58, St. Vincent Street, Glasgow.
Agent for the Applicant.

[This Drawing is a reproduction of the Original on a reduced scale]

